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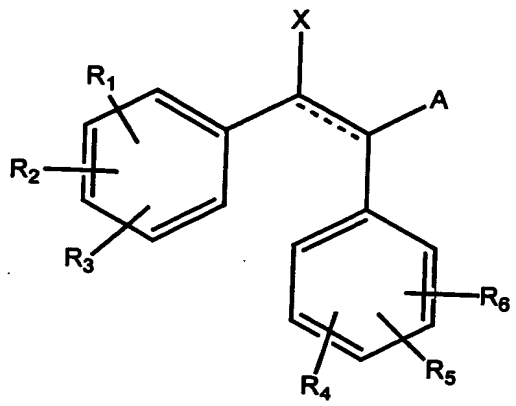
Claims

1. A compound of the formula I:



(I)

wherein the bond represented by the dotted line may be an optional double bond, and the geometry across the bond may be E or Z;

A=-COOR, -CONR'R", -CN, -COR_7 wherein R, R', R" and R_7 are defined below;

X = H, OH, or C_1-C_{10} linear or branched alkyl or alkenyl groups, optionally substituted with COOR, carbonyl, or halo;

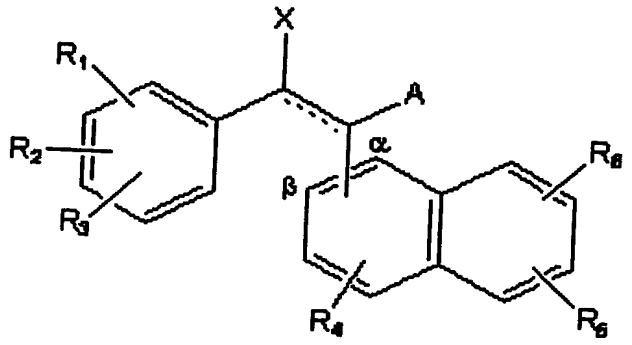
R = H or C_1-C_{20} linear or branched alkyl or aryl or aralkyl, or a pharmaceutically acceptable counter-ion;

R_1, R_2, R_3, R_4, R_5, R_6 and R_7 are independently H; C_1-C_{20} linear or branched alkyl or alkenyl groups optionally substituted; COOR where R is as defined previously; NR'R" or CONR'R", where R' and R" may be independently H or C_1-C_{20} linear or branched alkyl or aryl; OH; C_1-C_{20} alkoxy; C_1-C_{20} acylamino; C_1-C_{20} acyloxy; C_1-C_{20} alkanoyl; C_1-C_{20} alkoxycarbonyl; halo; NO_2; $SO_2R'"$; CZ_3, where each Z is independently a halo atom, H, alkyl, chloro or fluoro-substituted alkyl; or SR'", where R'" may be H or linear or branched C_1-C_{20} alkyl; or R_2 and R_3 together, or R_5 and R_6 together may be joined to form methylenedioxy or ethylenedioxy groups;

with the proviso that when X, R_3, R_5 and R_6 are H; R_4 is p-hydroxy; R_1 and R_2 together are 3,5-dimethoxy; then the dotted line is not a double bond in the E-configuration.

2. A compound according to claim 1 wherein A=-COOR.

3. A compound of the formula II:



(II)

wherein the bond represented by the dotted line may be an optional double bond, the geometry across the bond may be E or Z, and the naphthyl group may be linked at an α or β position;

A=-COOR; -CONR'R", -CN, -COR_7 wherein R, R', R" and R_7 are defined below;

X = H, OH, or C_1-C_{10} linear or branched alkyl or alkenyl groups, optionally substituted with COOR, carbonyl, or halo;

R = H or C_1-C_{20} linear or branched alkyl or aryl or aralkyl, or a pharmaceutically acceptable counter-ion;

R_1, R_2, R_3, R_4, R_5, R_6, and R_7 are independently H; C_1-C_{20} linear or branched alkyl or alkenyl groups optionally substituted; COOR where R is defined previously; R; NR'R" or CONR'R", where R' and R" may be independently H or C_1-C_{20} linear or branched alkyl or aryl; OH; C_1-C_{20} alkoxy; C_1-C_{20} acylamino; C_1-C_{20} acyloxy; C_1-C_{20} alkanoyl; C_1-C_{20} alkoxycarbonyl; halo; NO_2; SO_2R'''; CZ_3; where each Z is independently a halo atom, H, alkyl, chloro or fluoro-substituted alkyl; or SR'", where R'" may be H or linear or branched C_1-C_{20} alkyl or R_2 and R_3 together, or R_5 and R_6 together may be joined to form metheylenedioxy or ethylenedioxy groups.

4. A compound according to claim 1, wherein A=-COOR, X, R_3, R_5 and R_6 are H; R_4 is p-hydroxy; R_1 R_2 together are 3,5-dimethoxy; and the dotted line is a double bond in the Z-configuration.

5. A compound according to claim 4, wherein R is H.

6. A compound according to claim 4, wherein R is Na+.

7. A compound according to claim 2, wherein R_4 is p-hydroxy; R_1 and R_2 together are 3,5-dimethoxy and the dotted line represents a double bond.

8. A compound according to claim 3, wherein R_1 and R_2 together are 3,5-dimethoxy and the dotted line represents a double bond.

9. A pharmaceutical composition for the treatment of diabetes comprising a therapeutically effective amount of a compound of any one of the claims 1 to 8, or mixtures thereof, in a pharmaceutically acceptable carrier.

10. A composition according to claim 9 which is suitable for oral administration.

11. A method for treating diabetes comprising the step of administering to a subject suffering from a diabetic condition a therapeutically effective amount of a compound according to any one of claims 1 to 8, or mixtures thereof, in a pharmaceutically acceptable carrier.

12. A method according to claim 11 in which said compound is administered orally to said subject.

13. A pharmaceutical composition for the treatment of diabetes comprising a therapeutically effective amount of a compound according to any of claims 1 to 8 in a physiologically acceptable carrier, wherein the bond represented by the dotted line may be an optional double bond, and the geometry across the bond may be E or Z;

R = H, linear or branched C_1-C_{20} alkyl, aryl or aralkyl, or a pharmaceutically acceptable counter-ion.

14. A composition according to claim 13, wherein R is H or Na+ and said double bond is in the E-configuration.

15. A composition according to claim 13, wherein R is H or Na+ and said double bond is in the Z-configuration.

16. A composition according to claim 15, wherein R is Na+.

17. A composition according to claim 14, wherein R is Na+.

18. A composition according to claim 13, wherein said composition is suitable for oral administration.

19. A method of treating diabetes comprising a step of administering to a subject suffering from a diabetic condition a therapeutically effective amount of a compound according to any of claims 1 to 8 in a physiologically acceptable carrier, wherein the bond represented by the dotted line may be an optional double bond, and the geometry across the bond may be E or Z;

R = H, linear or branched C_1-C_{20} alkyl or aryl, or a pharmaceutically acceptable counter-ion.

20. A method according to claim 19, wherein R is H or Na+ and said double bond is in the E-configuration.

21. A method according to claim 19, wherein R is H or Na+ and said double bond is in the Z-configuration.

22. A method according to claim 20, wherein R is Na+.

23. A method according to claim 21, wherein R is Na+.